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T H E

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## THE ANCIENT INDIAN POTTERY OF MARAJÓ, BRAZIL.

BY PROFESSOR CH. FRED. HARTT.



Fig. 62 (Face).



Fig. 63 (Back of Head).



Head of Idol, Marajo.

THE existence of Indian burial places at various localities, in the Valley of the Amazonas, in which the dead were interred in earthen vases or pots, seems to have long been known. Von Martius\* mentions the occurrence of these vases near Manáos, at Fonte Bôa and Serpa, on the Rio das Trombetas, and elsewhere. He besides incidentally refers† to the recent discovery of large collections of them at a place on the Island of Marajó, or Johannes,

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\* Zur Ethnographie Amerika's zumal Braziliens, p. 440.

† Op. cit., p. 178.

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Entered according to Act of Congress, in the year 1871, by the PEABODY ACADEMY OF SCIENCE, in the Office of the Librarian of Congress, at Washington.

called Os Camutins.\* These last he supposed to be of Tupí origin. The same author says that the Tupís sometimes buried their dead in vases which were rude and unornamented. The Omaguas still use this mode of interment, but the vases are buried in the huts. I was informed at Rio das Contas, in the southern part of the Province of Bahia, that the Patachos bury their dead in earthen jars.

I do not know that any systematic examination has ever been made of any of the ancient Amazonian burial places. Last summer, while at Pará, Senhor Ferreira Penna, late Provincial Secretary, and the author of a very excellent little book† on the western part of the Province, called my attention to the fact of the existence of the Marajó pottery at Lake Arary. Being unable to visit the locality in person, I sent one of my assistants, Mr. W. S. Barnard, to examine it. Mr. Barnard reports that Indian burial stations are quite numerous in the centre of the island. The principal ones are, however, the Island of Camutí in the Rio Anajás, near the Fazenda de São Luiz, and probably the same called Os Camutins, by Von Martius; another near the Fazenda da Fortaleza, consisting of a mound from eight to twelve feet high, built up on the flat campos, forming an island during the annual overflow, and full of vases; another on the campo near Lake Guajará, which Mr. Barnard thought might contain four or five acres; but the most interesting appears to be the *Ilha das Pacovas*‡ in Lake Arary, which was visited by my assistant.

The Ilha das Pacovas lies close to the western side of the lake, opposite the beginning of the Rio Arary, which forms the outlet to the lagoa, and just to the south of the mouth of the Igarapé das Armas. It is oblong in shape, about ninety paces in length from north to south, and about forty paces in width. In the month of November, when the water was low, it was somewhat over ten feet in height above the level of the lake. It is for the most part covered with large forest trees. Situated at the northern end of the island, and separated from it by a narrow channel, is a little crescent-shaped islet apparently built on as an addition,

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\* *Camuti* is the Tupí word for *pot*. The Portuguese often write it *Camutim*. Treated as a Portuguese word, the plural would, in this case, be *Camutins*.

† Entitled, "A Região Occidental da Provincia do Pará," and published by the government.

‡ *Pacova*, Portuguese form for Tupí *pacúa*, a banana. The island takes its name from the banana trees growing upon it.

and not so high as the main island. Both were evidently raised artificially, and are full of burial vases and pottery of all kinds. The vases, which are about three feet in height, are, in some places, buried as many as three or four above one another, but they are more or less scattered. The waves have worn away the edges of the island making a sloping shore full of broken burial jars and thickly strewn over with fragments of pottery.

Mr. Barnard made no excavations. He, however, collected specimens, in a more or less broken state, of what was at hand. His collection consists entirely of pottery. Bones were very rare, and very much broken up. I regret exceedingly, that of these re-

Fig. 64.

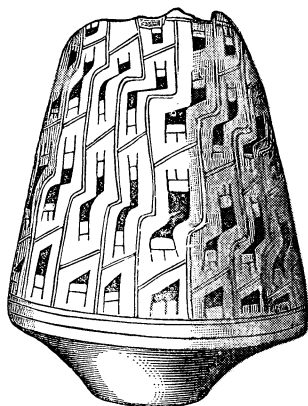
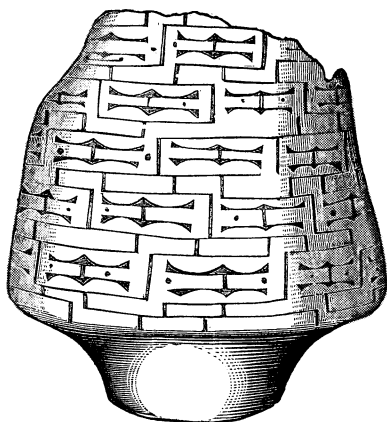


Fig. 65.



Indian Burial Jars, Marajo.

mains, none were brought home, but I may state here, that an expedition is on foot to thoroughly explore this, as well as some of the other localities.

Of jars or vases used for burial purposes (*ygaçaua*, \* *ygaçaua-ocú*, *camuti*, Lingoa geral) there are two in the collection, large specimens which show quite well the form, together with a number of fragments. The two more perfect specimens (Figs. 64 and 65), are of the same general shape, but they differ in the style of ornamentation. Both consist substantially of two truncated cones united by their bases, the apical angle of the lower cone being much more obtuse than that of the upper, so that the greatest

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\* *Ygaçaua* (*igaçaba* of Tupí dictionaries) properly means a large waterpot.

diameter of the vessel would be at about one-tenth its height, measuring from its base. The vase represented in fig. 64, judging from the curving outwards of the upper broken edge, as well as from the ornamentation, must have been little less than twenty inches in height. The diameter of the mouth I cannot give; the greatest diameter, measuring inside, is fourteen and three-fourths inches; that of the base is about five inches inside. The sides of the upper part of the jar slope regularly. Those of the lower part are slightly concave. Though skilfully made, it is nowhere exactly round, and bears no marks of having been shaped on a wheel. All the Marajó pottery was made by hand. The material is a rather fine clay with little or no sand. I have not observed, in the ancient Marajó pottery, any admixture of the ashes of the Caraiapé tree (*Licanea utilis*), which are extensively used, at present, both by Indians and whites. The vase under discussion has broken with a very irregular fracture. The thickness at the base is about half an inch, at the top about a quarter. The outside of the vase appears to have been shaved down smooth, probably with a piece of wood, and washed with a fine whitish clay which has darkened in burning. The surface is very smooth, but quite irregular. The base and inside have not been polished. The ornamentation is unique and is well shown in the engraving. The lines are deeply engraved. The broad shaded portions of the chair-like figure have been roughly scraped, apparently by a stick with a broad flat end. These portions, as well as the lines of the figure, have received a wash of red clay laid on very daubily. The broad line, just above the base, is colored in the same way, but the double lines, separating the figures, are uncolored. As will be seen from the engraving, there is considerable variety in the rendering of the design.

The other vase (fig. 65) differs from that just described, in being a little larger, and in having the sides of the basal portion more concave. The material and the surface finish are the same, but the wash of cream-colored clay is of a somewhat lighter color, and the surface has a hard, glazed look. The pattern is quite as singular as that of the vase just described. The designs and all the double lines are washed with red clay daubed on as before. This vase is slighter than its companion.

Both of these vases were probably furnished with projecting knobs or ears (*nambí*) around the mouth. These are often in the

form of heads of animals and men. They are readily broken off, and large numbers of them were picked up on the shore amongst the broken pottery. In the collection is a fragment of another burial urn, whose greatest diameter must have been about two feet. It appears to have been made on the same pattern with fig. 64. The design was substantially the same, but the chair-shaped figure was more drawn out and disposed horizontally. The surface of the vase has the same creamy wash, and the engraved design is painted red. The bounding lines are treble or quadruple, and not colored.

Another fragment is of quite a small vase about eight or ten inches in diameter. The upper part, for apparently somewhat less than one-third the length, is swollen out, and ornamented with scroll-shaped bosses, curious knobs, and engraved figures. The part immediately below this raised portion is cylindrical, and ornamented with figures thrown into relief by deep, wide, engraved lines. The upper bulging portion received a wash of creamy white clay, and the lower part a similar coat of red clay. The whole surface was evenly smoothed, and the line-figures were cut in, or scraped out. One of the tools, used in cutting, had a narrow chisel-like edge, and was probably the tooth of some rodent. Where large surfaces have been cut down, the parallel marks of the tool are very distinct. The mouth of this vase was slightly funnel-shaped, and the lip probably bore ornaments.

In addition to the above vases there are two other fragments of less interest. One indicates a vase, the body of which must have been about eight inches in diameter, and over a foot high. It is rudely smoothed inside, but the outside is rough and without ornament. The other was, in the body, at least, cylindrical, and about five inches in diameter. The outside was washed with red clay. A sort of geometrical pattern is cut through this into a lighter material below.

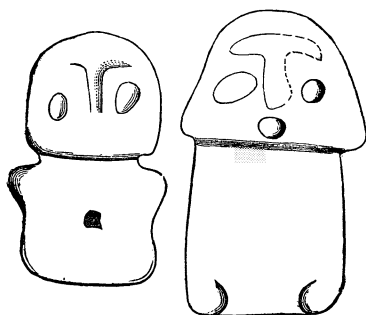
It is just possible that some of the smaller vases, above described, may not have been intended for burial purposes. The largest are too small to accommodate a skeleton, even if disarticulated. All the bones found in the urns were fragmentary. The probabilities are that the bodies were burned, and that only the ashes and charred bones were placed in the urns. An analysis of a small amount of black ash-like earth, found adhering to one of the jars, was made for me by one of my students, and found to contain a very large percentage of phosphate of lime.

There are two or three disk-shaped objects in the collection, which were probably used as covers to the jars. One of these has on one side curious engraved figures, which do not appear to be mere ornaments, but to be of a hieroglyphic character. This I am unable to figure here, but I shall describe it in another paper.

Of images or idols there are several in the collection, the most being in a more or less fragmentary condition. The largest of the specimens is represented in fig. 67. The body is nearly cylindrical, with two projecting knobs at the base for feet. A constriction represents the neck. The head was made quite round at first, but the after application of a high, wide, and angular ridge of clay, running completely over it from side to side, gives it a flat look. This ridge ends abruptly on each side at the neck and is there produced slightly outward. The

Fig. 66.

Fig. 67.



Indian Idols, Marajo.

brows and nose are represented by a T-shaped ridge of clay, applied in the same way as the crest; the eyes and mouth are simply round prominences. The brow and nose and the right eye have scaled off from this figure. The material is red clay with a wash of white. The surface is very rough, and the whole is very rudely made. The figure, from

its weight, is evidently hollow, as were most of the others. The height is five and a half inches.

The figure represented in outline in fig. 66, is solid. It is exceedingly rudely made of coarse clay, full of sandgrains. The features are very indistinct. The brows and nose are represented by a T-shaped ridge. Slight projections from the shoulders hint at arms, and at the base are two irregular prominences as in fig. 67. The extreme flatness of the head is remarkable. In front is a hole, but whether accidental, or purposely made, I cannot determine. The height of the figure is about three and a half inches.

The same type of head and features recurs in the larger and more artistically finished head, of which fig. 68, is a representation. This last is also flattened, and shows the same transverse crest which, just opposite the eyes, is bent forward on each side. The united brows and nose form a wide, prominent, T-

shaped ridge as in the other figures, the alæ of the nose being, however, well formed, though unsymmetrical. The eyes are round and very prominent, the pupil being represented. The mouth is a low, rounded elevation. The face received a wash of white clay. Around the brows and nose runs a wide, shallow groove painted red; a similar groove surrounds the eyes. The broad bands on each side of the mouth are also painted red. The other lines represented in the cut are engraved with a sharp point. The pattern enclosed

Fig. 68.

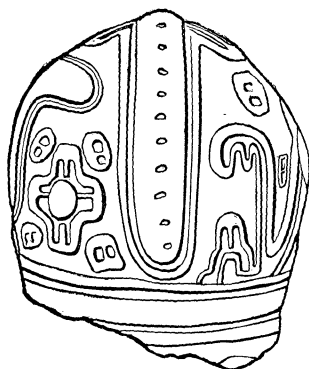


Head of Idol, Marajo.

in the rude circles occurs on other pieces of pottery from the same locality, as we shall see farther on. The back of the head is smooth and unornamented. The figure was hollow, the body probably resembling that of fig. 67. It was built from the base upward, the top of the head being the last part formed. Layers of clay were laid on one above the other, overlapping inside, and then pressed into shape by the fingers, which were introduced through a hole in the top of the head. The imprints of the fingers preserve sharply the impressions of the striæ of the skin, showing

the direction from which the fingers were applied. Finally, a cap of clay was applied above, closing the opening, and the figure was worked into shape from the outside. The height of the head is three inches; breadth, four inches. Another head, also separate from the body and represented in figs. 62, 63 and 69, is larger than the others and in some respects more elaborately executed. It resembles them, however, in its being flattened, in its being furnished with the transverse crest, which, in this case, is low and rounded, and in the T-shaped combined brows and nose. It, however, differs from the images just described in the grotesque ornamentation of the eyes, cheek

Fig. 69.



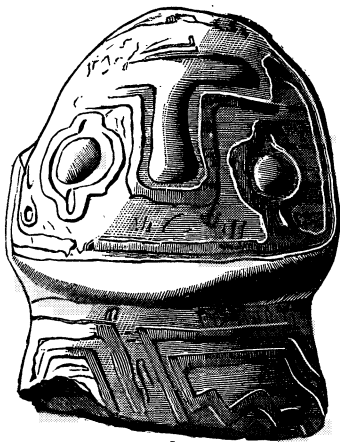
Side view of the head of idol represented in Figs. 62 and 63.

combined brows and nose. It, however, differs from the images just described in the grotesque ornamentation of the eyes, cheek



and forehead, and in the figures on the back of the head. All these are so well shown in the engravings as to need no description. The form of the mouth is peculiar. This figure was made in the same way as the last described, being built up from below, the top of the head being the last part formed. Instead of heavy, irregular layers of clay seen in the inside of fig. 68, the inside of this head shows fashioning by the aid of a narrow, flat-pointed instrument of wood or bone, which was introduced from above and before the head was finished, and turned round and round leaving shallow, irregularly concentric furrows, which extend nearly to the top. The outside was moulded so as to give the transverse crest, the brows, nose, eyes and mouth prominence.

Fig. 70.



Head of Idol, Marajo. Front view.

The surface then received a red wash. After this the ornaments were left in relief by the cutting down of the surface. The principal tool used had a narrow, chisel-like edge, slightly hollowed, which left a little elevation running along the middle of the groove cut by it. This instrument, I believe to have been the tooth of some rodent. The marks it made are very distinct, but it has been difficult to represent them satisfactorily in the engravings. It is hardly necessary to add, that all the features and the ornaments in relief are red, while

the background is the color of the light, unpainted clay. A fragment of the body below the neck is preserved, showing part of a red figure in relief, so that, without doubt, the whole idol was ornamented in the same general style as the head. The height of this specimen is four and a half, and the breadth four inches.

The ornamentation of the head just described might be regarded as capricious, were it not for the occurrence in the collection of the head of another idol (Figs. 70 and 71), which resembles it very closely. This last has not only the same shape of head, but the same pattern of ornamentation, though the latter is expressed in a more simple manner. There are, besides the same

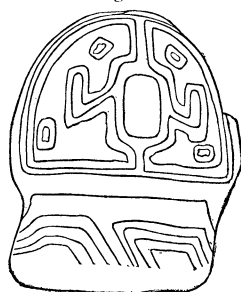
broad raised lines bordering the crest, brows and nose. The mouth is not represented. The ornament about the eye is substantially the same in both, but in the smaller head it has only two salient parts, or rays. It is interesting to observe, that the little eye-like figure of which in the larger head there are four about each eye is not wholly forgotten in the smaller head, but it makes its appearance in the lower outer corner of the right cheek, as an irregular hollow square. The central boss on the back of the smaller head (Fig. 71), and the W-shaped figure in which it stands, form manifestly the same design as that seen on the back of the larger head. The two upper eye-shaped ornaments on the back of the larger head appear on the smaller as hollow squares. The two lower in the smaller head correspond to ornaments, which, in the larger are attached to the border. More of the body of this second image is preserved than of the other.

The specimen (Fig. 70) is about three inches in length. The ornamentation consists of raised lines forming hollow, angular figures unsymmetrically disposed both in front and behind. Part of the crest is broken away. The ornamentation was unskilfully executed with a very coarse tool. Since these two heads were found lying loose, and at a distance from one another, there is little probability of their having been made by the same hand. The points

of resemblance between them indicate the existence of a recognized and common design, which cannot but have a significance. Which is the elder of the two, and which corresponds more nearly to the original pattern, it is impossible to say. These images appear to have been of a sacred character, but whether they were used as idols during the life time of the individual, and buried with his ashes, or were sacred figures used only in burial, is not clear. I am unable to describe the mode of association of these images with the burial urns, as the former were picked up loose.

In connection with the vases and images, pottery of various kinds occurs. There are flask-like water-bottles, quite like those in use in Brazil to-day, cups, flat dishes and pots of various kinds, some very coarse, others highly ornamented with painted and en-

Fig. 71.



Back view of Head represented in Fig. 70.

graved lines, and with ears representing animals' heads or human figures.

In Fig. 72, *n*, is represented a fragment of what may have been a ladle. The fragment is slightly concavo-convex and three and one-half inches long. Both sides were scraped down to a very smooth surface, which received a very thin coat of cream-colored clay, giving it a glazed look. The convex or outer side is traced with a rather elegant line-pattern in dark red, not engraved, which appears exceedingly well in contrast with the light background. Near the pointed extremity is a hole, showing wear, doubtless intended for a string. A shallow dish, of which I have a fragment, is painted inside very much in the same way as that just described, while another has a coarse figure drawn in dark umber on a light ground. I may remind the reader, that the variegated clays of the Amazonian deposits furnish very vivid tints, as reds, purples, browns, blues and yellows.\* With these colors, the Indian women of Monte Alegre and elsewhere paint elegant designs on drinking cups of gourd (*cuias*), upon a background of *Cumati* ("Apocynæa vel Asclepidea follicularis?" Mart.). I have observed no trace of the use of the resin of the *Yutahy-sica* (*Hymenææ* sp.) extensively used to-day on the Amazonas, for glazing vessels intended for use over the fire.

The Indians of the Amazonas use an earthen utensil for broiling or smoking various articles of food. It is like a large, deep, heavy basin somewhat wider at the mouth than at the base but with no bottom. This is inverted over a slow fire, the food to be cooked being laid on green stems of *taboca* (*Bambusa*), placed across the opening. This utensil the Brazilians call a *muqueador*.† A broken one ornamented with human features in high relief, was found at the *Ilha das Pacovas*.

There is a little cup in the collection about an inch and a half in height, ornamented with the design, *e*, fig. 72. In the engraving it is placed horizontally, but on the cup it is upright. The cup

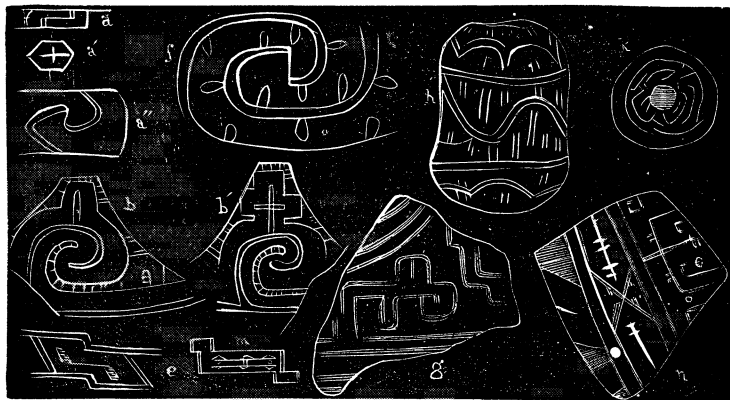
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\* The yellow clay is called *Taudá*, the white, *taudá tinga* or white *taudá*. The Portuguese form is *Tabatinga*.

† The verb is *muquear*. This is one of the few Portuguese verbs derived from the Tupí. The same process is carried out by making a framework of green sticks supported on upright forked stakes. On this, fish, turtle's eggs, etc., are smoked and half cooked. The ancient Tupis cooked human flesh in this way. On the Amazonas the apparatus is called *muquem*. *Lery*, *Stade* and the old writers give the word *bucan*. Many words now pronounced with an initial *m* or *b* had originally an initial *mb*. Thus on the Amazonas one finds to-day *mboia*, *moia* and *boia* (*boa constrictor*).

is washed white, both inside and out, and the lines are engraved, together with the S-shaped design, which corresponds with the chair-shaped figure on the burial vase represented in fig. 65. This pattern, with its various modifications, resembles so closely the design occurring on the face of the image, fig. 68, and elsewhere, that all seem to be but different expressions of the same primary idea, which, in the beginning, at least, probably had some significance. The S-shaped design like that on the head, fig. 68, is sometimes formed by regular curves, but these are occasionally angular, in which case, the figure resembles the Greek fret. The opposing curves are always drawn with a double line, but the curves

Fig. 72.



*a, a', a''*, Ornaments on fragment of pottery; *b, b'*, Fragment of a flat dish; *c*, Ornament on a little cup; *f* and *g*, Ornaments on fragments of pottery; *h*, Bead of pottery; *k*, engraved object; *m*, single design from vase, Fig. 65; *n*, Fragment of ladle.

are either not united at all in the middle of the figure, or if united, it is by a single line. In *a* and *a'*, fig. 72, from the same piece of pottery, and *f*, same figure, we have three modifications of the design, with curves united. In *b* and *b'*, fig. 72,\* showing both sides of a fragment of a flat plate, they are not united. In some cases, as in *f, b*, and *b'*, fig. 72, the figure is ornamented by coarse shading between the double lines or by perpendicular loops or lines. On *b'* is a cross of the ordinary Christian type, but it is well known that this emblem is one of the simplest of ornaments in use, not only among pagan nations long before the Christian era, but to-day.

\*The longest diameter of this specimen is four and a quarter inches.

If the maker of the pottery had attached the Christian significance to the figure he was drawing, he would not have represented it on the opposite side of the same vessel without the transverse bar, and if the Indians, who made the Marajó mounds had been christianized they would not have buried their dead in jars. It seems to me that the Indian artist, finding he had a large space to fill up on one side, drew a transverse line across the perpendicular one to make the figure larger. The cross also appears on *a'*, fig. 72.

The question of the primary significance of the S-shaped design I must leave to the student of the philosophy of art, together with the question of the independent origin of ornament, which also arises in the study of this pottery. The observant reader will detect the same pattern that I have just been describing, in use in carpets, ornamental borders and a hundred other places to-day.

Among other relics from the Arary mound is a large bead of clay roughly represented in fig. 72, *h*. It is very irregular in shape, rudely made, and the ornamentation is badly executed. It is much broken. Its length is two and a quarter inches.

Fig. 72, *k*, represents the end of an object cylindrical in the middle, and suddenly swelling out at both ends, one of which is broken. The design is deeply engraved, and the object was perhaps used as a stamp, but it is so irregular that it would have served very indifferently for that purpose. The width across the face is about an inch and three-quarters. A somewhat similar figure to that on the end is engraved on the side. The perforation extends nearly through from one end to the other. It might be taken for an unfinished bead were it not that two other partially perforated objects of a somewhat similar character are found in the collection. One of these is a lens-shaped piece of pottery, an inch and three-quarters across the flat face, which appears to have been ground into its present form. A hole is bored through it in a direction perpendicular to the centre of the flat face. The other is a pear-shaped object, about the size of a large marble, perforated in like manner from the smaller end. Its use I cannot divine.

We have no historical record of the tribe that built the Marajó mounds. Senhor Penna has had the kindness to examine carefully into the subject for me, and it would appear that the mounds antedate the discovery of America. We have no record of the existence of any tribe in the lower Amazonas within historic times, that buried its dead in jars. I do not feel like coin-

ciding with Von Martius in the supposition that the Marajó mounds were made by Indians of Tupí descent. There are many resemblances between the pottery of Marajó and that of Peru and North America that will be worth study. I hope that future explorations will enable me to clear up some of the doubts expressed in this paper, and cast much needed light on the ancient races of the Amazonian valley.

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### APPLICATION OF THE DARWINIAN THEORY TO FLOWERS AND THE INSECTS WHICH VISIT THEM.\*

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THE first impression which flowers make upon us with the beauty of their radiate and symmetrical forms, their luxuriant display of colors and the variety and sweetness of their odors, easily begets in us the idea that they were created for delighting and gratifying our senses.

This, however, is a pleasing fancy which the Darwinian doctrine speedily annihilates. This doctrine teaches us that all the species of animals and plants now in existence are only the result of the same laws which, starting from the beginning of organic life on the earth and coming down to our day, have governed and continue to govern all animated things; and these are the laws of hereditary transmission and variation, of the struggle for existence and the consequent necessity that only those forms survive which best respond to external circumstances.

According to the Darwinian doctrine all the characteristics and properties of animals and plants appeared at first only as simple, *individual variations*, which were a necessary consequence of determinate physical and chemical actions,† and which, if they have

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\* Discourse delivered by Dr. ERM. MULLER of Lippstadt at the 26th General Assembly of the Naturhistorischen Verein für Rheinland und Westphalen, 1869. Translated into Italian from the German with Annotations by Prof. FREDERIC DELPINO. Translated for the NATURALIST from the Italian by R. L. PACKARD.

† The lively sense of fraternal friendship which unites me with the able author of this discourse cannot dissuade me from expressing my own views whenever they differ from his. I also am profoundly convinced that all variations were at first merely phenomena of individual variations subsequently fixed by the laws of hereditary descent,